IN THE SPECIFICATION

Please replace the paragraph beginning at page 2, line 8 with the following replacement paragraph:

By the way, steering wheels of vehicles are generally of the construction that the angle of steered wheels (usu., front wheels) over the whole range cannot [[b]] <u>be</u> controlled through the steering within one rotation (360 degrees). For example, as the steering wheel is turned from the center or the neutral position two rotations (720 degrees) in the left direction and two rotations (720 degrees) in the right direction, the steering wheel is capable of varying its steering angle as desired within a predetermined angular range by rotating the steering wheel through 720 degrees toward the plus side or the minus side. For this reason, even where the same construction is taken as "the steering sensor and the power steering device" disclosed in the aforementioned Japanese application, it is impossible to detect the absolute rotational position of the steering wheel in addition to the rotational angle thereof by the use of one rotary angle sensor. Therefore, plural rotary angle sensors have to be combined in detecting the absolute rotational position. However, [[sinc]] <u>since</u> in another aspect, the construction using the plural rotary angle sensors directly results in increasing the product cost as well as in heightening the frequency of trouble occurrence, such construction as to increase the number of components is difficult to adopt as a matter of the fact.

Please replace the paragraph beginning at page 7, line 6 with the following replacement paragraph:

FIG. 8(C) is still another characteristic graph similar to FIG. 8(A) in [[th]] <u>the</u> case of the calculated value being (r)=4.00;

Please replace the paragraph beginning at page 9, line 18 with the following replacement paragraph:

The motor shaft 43 has a ball nut 52 fit on its internal surface to be rotatable bodily therewith. A female ball screw 52a is formed at the internal surface of the ball nut 52. A plurality of balls 54 are interposed between the female ball screw 52a of [[th]] the ball screw nut 52 and the male ball screw 24b of the rack shaft 24. This constitutes a ball screw mechanism 50 capable of moving the rack shaft 24 in the axial direction thereof upon rotation of the motor shaft 43.

Please replace the paragraph beginning at page 9, line 24 with the following replacement paragraph:

That is, the ball screw mechanism 50 composed of the both ball screws 24b, 52a and the like is able to convert the rotational torque in the positive-going and negative-going directions of the motor shaft 43 into the reciprocating motion of [[th]] the rack shaft 24 in the axial direction thereof. Thus, the reciprocating motion becomes the assist force which reduces the manipulation or steering force to be exerted on [[th]] the steering wheel 21, through the pinion shaft 23 constituting the rack-and-pinion mechanism together with the rack shaft 24.

Please replace the paragraph beginning at page 11, line 7 with the following replacement paragraph:

Further, the motor resolver 44 is constructed also like the first resolver 35, but is different from the same in the following respects. In this motor resolver 44, the first yoke YK1, the fourth yoke YK4, the first coil CL1 and the fourth coil YK4 [[ar]] are provided on the internal surface of the motor housing 27, while the second yoke YK2, the third yoke YK3, the second coil CL2 and the third coil CL3 are provided on the circumferential surface

of the motor shaft 43. Further, the number of the pole pairs in the motor resolver 44 is seven (so-called "7X").

Please replace the paragraph beginning at page 12, line 28 with the following replacement paragraph:

Next, description will be made as to the torque [[torqu]] detection which is based on the resolver signals output from the first and second resolvers 35, 37.

Please replace the paragraph beginning at page 13, line 26 with the following replacement paragraph:

The torsion bar 31, when given a torsion, brings about the relative rotational difference $\Delta\theta$ (=θ1-θ2) between the input shaft 23a and the output shaft 23b. As a result, the steering torque T can be calculated from the relative rotational difference $\Delta\theta$ indicating the torsion angle of the torsion bar 31 and the torsional rigidity of the torsion bar 31. Accordingly, by executing a known assist control for assisting [[th]] the steering force in dependence on the calculated steering torque T, the CPU 61 of the ECU 60 is able to control the aforementioned motor 40, so that the steering manipulation of the driver can be assisted with the steering force generated by the motor 40.

Please replace the paragraph beginning at page 15, line 22 with the following replacement paragraph:

At the next Step S103, processing is executed to calculate the mechanical angle θTm of the steering wheel 21 from the electrical angles θT1, θT2. In this particular embodiment, since the first and second resolvers 35, 37 are constructed to be of the five-pair poles and the six-pair poles respectively, the mechanical angle θTm of the steering wheel 21 can be

calculated based on the electrical angles θT1, θT2 of the two resolvers 35, 37 differing in the number of pole pairs from each other. This operation processing is described ~~d-scribed~~ in detail in Japanese ~~Japanes~~ Patent Application No. 2002-196131 filed by the Assignee of the present application, and hence, reference is to be made to that application for details.

Please replace the paragraph beginning at page 24, line 20 with the following replacement paragraph:

Herein, since the motor electrical angle θMe(A) is calculated by the equation (3) above, the calculated motor electrical angle θMe(0) in the case of A=0, θTm=0 and r=60.67 for example is calculated by replacing θTm with θTm=(0+0.4) including the error 0.4 of the θTm and then, by substituting θTm=(0+0.4) into the equation (3) and becomes ((0+0.4)+360.times.0).times.60.76=24.3 degrees). That is, the error 0.4 is multiplied with (r) (in this example, multiplied with 60.76) to be reflected on the calculated motor electrical angles θMe(A). Such error is anticipated to be involved in the true value as well as in the false values adjoining thereto and hence, when calculated under such anticipation, is to be mad twice. Thus, the [[rror]] error becomes 48.6 degrees which the twice of the 24.3 degrees.

Please replace the paragraph beginning at page 25, line 1 with the following replacement paragraph:

Accordingly, as having been described with reference to FIG. 8(A), even when the true value has a room of 90 degrees from the value adjoining thereto, the error due to the shaking of the mechanical system gives the calculated motor electrical angle θMe(A) an error of almost 50 degrees ($\approx$48.6 degrees), whereby it results that the room is restrained to 40 degrees (=90-50). Where such error zone is represented as shown in FIG. 9, the boundary of

the error zone can be specified by drawing a one-dot chain line along the line of the 50-room for the true [[valu]] value detection.

Please replace the paragraph beginning at page 28, line 15 with the following replacement paragraph:

Further, while the one-dot chain line for A=1 increases linearly from 0 to 1080 degrees in FIG. 10(A), it turns back each time of reaching 180 degrees and 0 degrees in FIG. 10(B). Thus, the one-dot chain line for A=1 in FIG. 10(B) turns back each time the numerical value of the decimal place of the calculated [[valu]] value (r) reaches 0.167, 0.333, 0,5, 0.667 and 0.833 thereby to repeat increase and decrease three times and thus, forms a zigzag line (one-dot chain line) drawing three isosceles triangles.

Please replace the paragraph beginning at page 28, line 22 with the following replacement paragraph:

Further, where the calculated motor electrical angle θMe(-2) in the case of A=-2 is assumed as the true value, each of the zigzag lines represented above shows that as the deviation from the broken line for A=-2 comes close to 0 (zero), the confusion tends to arise between the calculated motor electrical angle θM (-2) as the true value and the calculated motor electrical angles θMe(-1), θMe(0) and θMe(1) respectively as other false values. Therefore, where the false values each of which is closest to the electrical angle θMe(-2) as the true value at each of the numerical values of the decimal place [[ar]] are selected from the zigzag lines, the zigzag line K (represented by the thick line in FIG. 10(B) can be generated. That is, this zigzag line K is the characteristic (zigzag line K), as described with reference to FIG. 9, which represents the variation in the room for the true value detection in relation to the numerical values of the decimal place of the calculated value (r).

Please replace the paragraph beginning at page 33, line 24 with the following replacement paragraph:

In the foregoing embodiment, description has been made taking the example that the steering wheel 21 are rotated two rotations to the left and two rotations to the left and hence, four rotations in total. The present invention is not limited to [[th]] the example as taken in the foregoing embodiment. As long as the steering wheel is capable of rotating two rotations or more, the same technological functions and the effects can be obtained, for example, when it is rotated two rotations in total including one to the left and one to the right, when it is rotated six rotations including three to the left and three to the right, or when it is rotated three rotations including 1.5 to the left and 1.5 to the right.

Please replace the paragraph beginning at page 34, line 21 with the following replacement paragraph:

Further in the foregoing embodiment, the numerical value of the decimal place of the calculated value (r) is within the predetermined range. That is, the numerical value of the decimal place of the calculated value (r) which is obtained by multiplying the reduction gear ration of the reduction gear mechanism with the number of the pole pairs of the third resolver 44 is within the predetermined range. Thus, in addition to the advantage that the steering angle (0 to 360 degrees) within one revolution of the steering wheel 12 which is obtained from the first steering angle .theta.T1 of the first resolver 35 and the second steering ~~ste-ring~~ angle θT2 of the second resolver 44 does not take the same value within any one rotational rang unit (A=-2, -1, 0, 1) as that within another rotational range unit of the plural left and right rotations of the steering wheel 21, non-interference area can be secured between one rotational range unit with another unit next thereto. That is, where an detection error in the

steering angle of the steering wheel 21 arises due to the errors in the dimensional accuracy of the mechanical components which constitute the steering mechanism or due to the abrasion of such mechanical components or due to errors in the temperature characteristic of the electrical components for processing the resolver signals, there can be provided a room for which the numerical value of the decimal place of the calculated value (r) within one rotational range unit of the steering wheel 21 does not become the same value as that within another range unit next thereto. Thus, even where such error arises, the absolute value of the steering wheel can be detected precisely, so that the motor 40 for assisting the steering manipulation can be controlled reliably in dependence on the absolute value of the steering wheel 21 so precisely detected.

Please replace the paragraph beginning at page 35, line 15 with the following replacement paragraph:

Also in the foregoing embodiment, the numerical value of [[of]] the decimal place of the calculated value (r) is within one of the predetermined ranges. This predetermine ranges are numerical ranges of the decimal place which cause those angular deviations corresponding in value to 67% to 100% of the largest one of the angular deviations from the motor electrical angles which deviations are different for the respective rotational range units including at lest one left rotation and one right rotation of said steering wheel.

Please replace the paragraph beginning at page 37, line 7 with the following replacement paragraph:

Furthermore, in the embodiment implementing the method of manufacturing the electric power steering device and in the embodiment realizing the apparatus for manufacturing the same, the step of and means for setting at least one of the reduction gear

ratio of the reduction gear mechanism and the number of pole pairs of the third resolver 44 is so set that the calculated value (r) which is obtained by multiplying the reduction gear ratio with the number of pole pairs of the third resolver 44 represents a non-integer having one of "0.17 to 0.28", "0.39 to 0.42", "0.58 to 0.61" and "0.72 to 0.83" as the numerical value of the decimal place thereof. That is, the numerical value of the decimal place of such a calculated value (r) is within on of numerical ranges of the decimal place which cause those angular deviations corresponding in value to 67% to 100% of the largest one of angular deviations from the motor electrical angles θMe. The angular deviations are different for the respective rotational range units (A=-2, -1, 0, 1) including at lest one left rotation and one right rotation of the steering wheel 21. In the concrete, the numerical ranges of the decimal place are represented as "0.17 to 0.28", "0.39 to 0.42", "0.58 to 0.61" and "0.72 to 0.83". The reason why these numerical ranges are provided is that, assuming that with respect to the neutral position of the steering wheel 21 as a center, one rotation range ($0<\theta \leq 360$ degrees) to the right of the steering wheel is taken as A=0 and another rotation range ($360<\theta \leq 720$ degrees) to the right of the steering wheel is taken as A=1 and that with respect to the neutral position of the steering wheel as the center, one rotation range ($0<\theta \leq 360$ degrees) to the left of the steering wheel is taken as A=-1, and another rotation range ($-360<\theta \leq 720$ degrees) to the left of the steering wheel is taken [[tak n]] as A=-2, the zigzag line K shown in FIG. 9 can be obtained by choosing the smallest angular deviation (A=-2 as shown in FIG. 10(A)) as the base from those deviations within the respective one-rotational ranges A=-2, -1, 0, 1.